

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Frederick William Strahm et al. Art Unit: 2154
Serial No.: 09/811,161 Examiner: Ashokkumar B. Patel
Filed: March 16, 2001
Title: PLURAL NETWORK COMMUNICATION CONNECTIONS (AS AMENDED)

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

Sir:

This brief on appeal is submitted under 37 CFR 41.37, thereby perfecting the notice of appeal which was originally filed on July 14, 2008. The sections required by 37 CFR 41.37 follow.

(1) Real Party in Interest

Intel Corporation, the assignee, is the real party in interest.

(2) Related Appeals and Interferences

There are no known related appeals or interferences in the United States.

(3) Status of Claims

Claims 1-11, 19-32 and 38-48 are pending with claims 1, 7, 11, 19, 23, 28 and 45 being independent. Claims 12-18 and 33-37 were previously cancelled. The rejection of claims 1-11, 19-32 and 38-48 are appealed.

(4) Status of Amendments

The claims have not been amended subsequent to final rejection. There are no unentered amendments.

(5) Summary of Claimed Subject Matter

Claim 1

Claim Language	Support in Specification and/or FIGS.
A method comprising: at a device, opening a first connection to a server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 10.
establishing an information exchange protocol for communicating on the first connection;	<i>See, e.g.</i> , page 4, line 10 – page 5, line 23; page 7, line 21 – page 8, line 10.
at a device, opening a second connection to the server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1 Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23.
selecting, from connections including the second connection, at least one connection to be an active connection and other connections as passive connections;	<i>See, e.g.</i> , page 6, lines 1 – page 7, line 20.
communicating information via the active connection using an information exchange protocol based on a type of the active connection; and	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23; page 9, lines 1-9; page 11, line 11 – page 12, line 6; page 14, lines 1-23; page 19, line 6; FIG. 3, Nos. 312, 320; and FIG. 5, No. 110, 160.
monitoring a predetermined set of parameters corresponding to one or more characteristics of the active and passive connections to determine whether to open one or more additional connections;	<i>See, e.g.</i> , page 9, line 10 – page 19, line 16; FIG. 3, No. 340.

close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.	
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Claim 11

Claim Language	Support in Specification and/or FIGS.
A method comprising: at a device, opening a first connection to a server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 10.
establishing an information exchange protocol for communicating on the first connection based on a type of the first connection;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23; page 9, lines 1-9; page 11, line 11 – page 12, line 6; page 14, lines 1-23; page 19, line 6; FIG. 3, Nos. 312, 320; and FIG. 5, No. 110, 160.
at the device, opening a second connection to the server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23.
selecting, from the opened connections including the second connection, one or more connections to be an active connection;	<i>See, e.g.</i> , page 6, lines 1 – page 7, line 20.
communicating information configured for the information exchange protocol, that was established for the first connection, using the active connection, the	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23; page 9, lines 1-9; page 11, line 11 – page

information comprising a command that causes the server to contact a remote system, receive a reply from the remote system, and effect a response without transmitting the reply to the device; and	12, line 6; page 14, lines 1-23; page 19, line 6; FIG. 3, Nos. 312, 320; and FIG. 5, No. 110, 160.
monitoring a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.	<i>See, e.g.</i> , page 9, line 10 – page 19, line 16; FIG. 3, No. 340.

Claim 19

Claim Language	Support in Specification and/or FIGS.
An apparatus comprising a processor and software configured to cause the processor to: open a first connection to a server;	<i>See, e.g.</i> , page 10, line 17 – page 11, line 10; FIG. 4, No. 110; page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 110, 114, 116, 118, 120; page 7, line 21 – page 8, line 10.
establish an information exchange protocol;	<i>See, e.g.</i> , page 4, line 10 – page 5, line 23; page 7, line 21 – page 8, line 10.
open a second connection to a server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23.

select from connections including the second connection, one or more connections to be an active connection;	<i>See, e.g.</i> , page 6, lines 1 – page 7, line 20.
communicate information via the active connection using the information exchange protocol established for the first connection; and	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23; page 9, lines 1-9; page 11, line 11 – page 12, line 6; page 14, lines 1-23; page 19, line 6; FIG. 3, Nos. 312, 320; and FIG. 5, No. 110.
monitor a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.	<i>See, e.g.</i> , page 9, line 10 – page 19, line 16; FIG. 3, No. 340.

Claim 23

Claim Language	Support in Specification and/or FIGS.
An article comprising a machine-readable medium that stores machine-executable instructions, the instructions causing a machine to: open a first connection to a server;	<i>See, e.g.</i> , <i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1; page 7, line 21 – page 8, line 10; page 22, line 19 – page 23, line 21.

establish an information exchange protocol;	<i>See, e.g.</i> , page 4, line 10 – page 5, line 23; page 7, line 21 – page 8, line 10.
open a second connection to a server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1; page 7, line 21 – page 8, line 23.
select from connections including the second connection, one or more connections to be an active connection;	<i>See, e.g.</i> , page 6, lines 1 – page 7, line 20; FIGS. 2 and 3.
communicate information via the active connection using the information exchange protocol established for the first connection; and	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23; page 9, lines 1-9; page 11, line 11 – page 12, line 6; page 14, lines 1-23; page 19, line 6; FIG. 3, Nos. 312, 320; and FIG. 5, No. 110, 160.
monitor a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.	<i>See, e.g.</i> , page 9, line 10 – page 19, line 16; FIG. 3, No. 340.

Claim 28

Claim Language	Support in Specification and/or FIGS.
A system comprising: a device, a server, and communication links, in which the device is configured to: open a first connection to the server using one of the communication links;	<i>See, e.g., See, e.g.,</i> page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 110, 114, 116, 118, 120; page 7, line 21 – page 8, line 10; page 22, line 19 – page 23, line 21; page 10, line 17 – page 11, line 10; FIG. 4, No. 110.
establish an information exchange protocol;	<i>See, e.g.,</i> page 4, line 10 – page 5, line 23; page 7, line 21 – page 8, line 10.
open a second connection to the server using another of the communication links;	<i>See, e.g.,</i> page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23.
select from the opened connections including the second connection, one or more connections to be an active connection;	<i>See, e.g.,</i> page 6, lines 1 – page 7, line 20.
communicate information via the active connection using the information exchange protocol established for the first connection; and	<i>See, e.g.,</i> page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1, Nos. 114, 116, 118, 120; page 7, line 21 – page 8, line 23; page 9, lines 1-9; page 11, line 11 – page 12, line 6; page 14, lines 1-23; page 19, line 6; FIGS. 3 and 5.
monitor a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to open one or more additional connections; close one or more of the	<i>See, e.g.,</i> page 9, line 10 – page 19, line 16; FIG. 3.

opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.	
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Claim 45

Claim Language	Support in Specification and/or FIGS.
A method comprising: at a device, opening a first connection to a server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1; page 7, line 21 – page 8, line 10.
establishing an information exchange protocol for communicating on the first connection;	<i>See, e.g.</i> , page 4, line 10 – page 5, line 23; page 7, line 21 – page 8, line 10.
at a device, opening a second connection to the server;	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1; page 7, line 21 – page 8, line 23.
selecting, from connections including the second connection, one or more connections to be an active connection and another connection to be a passive connection;	<i>See, e.g.</i> , page 6, lines 1 – page 7, line 20; FIGS. 2 and 3.
communicating information using the active connection, wherein the same network, security, and compression protocols and parameters are used for information exchange as for the first connection, while maintaining the passive connection; and	<i>See, e.g.</i> , page 2, lines 9-18; page 3, line 3 – page 4, line 9; FIG. 1; page 7, line 21 – page 8, line 23; page 9, lines 1-9; page 11, line 11 – page 12, line 6; page 14, lines 1-23; page 19, line 6; FIG. 3, Nos. 312, 320; and FIG. 5, No. 110, 160.

monitoring a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.	<i>See, e.g.,</i> page 9, line 10 – page 19, line 16; FIG. 3, No. 340.
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(6) Grounds of Rejection to be Reviewed on Appeal

I. Grounds of Rejection I – Rejections over Doviak

Claims 1-7, 9, 19, 20, 22-25, 27-32, 38-45 and 48 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,198,920 to Doviak et al. (“Doviak”).

II. Grounds of Rejection II – Rejections over Doviak and Gopalakrishna

Claims 8, 10, 21, 26, and 46 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Doviak in view of U.S. Patent No. 6,614,808 to Gopalakrishna (“Gopalakrishna”).

III. Grounds of Rejection III – Rejections over Doviak and Inoue

Claims 11 and 47 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Doviak in view of U.S. Patent Application Publication No. 2005/0132049 to Inoue et. al. (“Inoue”).

(7) Argument

I. Grounds of Rejection I – Rejections of claims 1-7, 9, 19, 20, 22-25, 27-32, 38-45 and 48

Claim 1 and its dependent claims

The Office continues to contend that Doviak anticipates claim 1. (See, e.g., Office Action Dated April 14, 2008 at pages 2-6 and 10-15.) However, the cited portions of Doviak fail to support the contention. In particular, Doviak fails to teach or suggest the claimed “monitoring a predetermined set of parameters corresponding to one or more characteristics of the active and passive connections to determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.”

In contrast to claim 1, Doviak teaches a system that “instructs how to select a particular network” to connect. (See, Doviak at col. 35, ll. 37-39.) Thus, Doviak merely determines which networks are available and selects one of the networks to connect and transmit data. (See, *id.* at col. 35, l. 58 – col. 36, l. 34.)

In addition, Doviak teaches a “Network Availability 210” function that “interrogates each installed Network Interface 214 in the Router 200 and may determine if the Network Interface 214 is installed...” (See, Doviak at column 34, lines 19-26.) The Network Availability process 210 in Doviak forwards to the Decision process 206 the information received from the Network Interface 214, and the “Decision process 206 operates in accordance with User Configured parameters 208 which specify when and through which Network the data is to be transmitted.” (See Doviak at column 30, lines 2-7.) Thus, the determination of which network to use in Doviak is based on predetermined user configured parameters and is not based on the claimed monitored parameters associated with active and passive connections.

The Office contends that the Network Interface 214 in Doviak that interrogates each installed Network Interface 214 teaches the claimed “monitoring a predetermined set of parameters...” However, Doviak teaches interrogating each installed Network Interface 214. (See, Doviak at column 34, lines 19-26.) Thus, the Network Interface 214 interrogates only those already installed network interfaces.

Also, the “Decision process 206 [in Doviak] operates in accordance with User Configured parameters 208 which specify when and through which Network the data is to be transmitted.” (See Doviak at column 30, lines 2-7.) Thus, the Decision process 206 selects which of the already installed networks should be used to transmit the data. Further, selecting the available network in Doviak is performed based on “User Configured parameters 208” and not based on the claimed “monitoring a predetermined set of parameters.”

Further, the Decision process 206 in Doviak does not determine based on the monitored “predetermined set of parameters” whether to “open one or more additional connections” and “close one or more of the opened connections” as recited in claim 1. In contrast, the system in Doviak has a set number of installed available networks that the Decision process 206 can select from. Nowhere does Doviak teach determining whether to open or close connections (See, e.g., Doviak at FIGS. 29-30.)

The Office contends that the interrogation step in Doviak teaches opening one or more additional connections, closing one or more connections, changing the selected active connection as a passive connection, and changing passive connections as the active connections. (See Office Action at page 6.) However, Doviak does not teach or suggest these claimed features. The interrogation step in Doviak is merely used to select from the already installed connections to use to transmit information. Further, the claimed features require “monitoring a predetermined set of

parameters corresponding to one or more characteristics of the active and passive connections to determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.” Thus, the claimed monitoring requires the determination on all four decisions. Nothing in Doviak can reasonably be construed to anticipate these monitoring features.

For at least these reasons, claim 1 is allowable over Doviak. Claims 2-6, 9 and 38-41 depend from claim 1, and are allowable over Doviak for at least the same reasons.

Claim 7 and its dependent claims

Claim 7 is allowable over Doviak for at least reasons similar to claim 1. Claims 42-44 depends from claim 7, and are allowable over Doviak for at least the same reasons.

Claim 19 and its dependent claims

Claim 19 is allowable over Doviak for at least reasons similar to claim 1. Claims 20-22 depend from claim 19, and are allowable over Doviak for at least the same reasons.

Claims 23 and its dependent claims

Claim 23 is allowable over Doviak for at least reasons similar to claim 1. Claims 24-25 and 27 depend from claim 23, and are allowable over Doviak for at least the same reasons.

Claims 28 and its dependent claims

Claim 28 is allowable over Doviak for at least reasons similar to claim 1. Claims 29-32 depend from claim 28, and are allowable over Doviak for at least the same reasons.

Claims 48 and its dependent claims

Claim 48 is allowable over Doviak for at least reasons similar to claim 1.

II. Grounds of Rejection II – Rejections of claims 8, 10, 21, 26, and 46

Claims 8 and 10

The proposed combination of Doviak and Gopalakrishna fails to teach or suggest each and every feature of claims 8 and 10. Claims 8 and 10 depend from claim 1, and are allowable over Doviak for at least reasons similar to claim 1. The addition of Gopalakrishna fails to cure the deficiencies of Doviak.

Due to the deficiencies of Doviak, the Office proposes to add the teachings of Gopalakrishna that allegedly teach the claimed “a process 100 for performing network packet aggregation over one or more client sessions.” (*See* Gopalakrishna at col. 4, ll. 53-55). However, Gopalakrishna suffers from similar deficiencies as Doviak. In particular, Gopalakrishna fails to teach or suggest the claimed opening two or more connections and assigning at least one of the connections as an active connection. In addition, Gopalakrishna fails to teach or suggest the claimed, “determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.” Since both Doviak and Gopalakrishna fail to teach or suggest the same claimed features, a hypothetical combination of Doviak and Gopalakrishna, which is not conceded, still fails to teach or suggest each and every features of claim 8 and 10.

For at least these reasons, claims 8 and 10 are allowable over the proposed combination of Doviak and Gopalakrishna.

Claims 21 and 26

Claims 21 and 26 are allowable over the proposed combination of Doviak and Gopalakrishna for at least reasons similar to claims 8 and 9.

Claim 46

Claim 46 is allowable over the proposed combination of Doviak and Gopalakrishna for at least reasons similar to claim 8.

III. Grounds of Rejection III – Rejections of claims 11 and 47

Claim 11

For at least reasons similar to claim 1, claim 11 is allowable over Doviak. The addition of Inoue fails to cure the deficiencies of Doviak.

Inoue teaches a system for connecting mobile devices through various routers and base stations. (*See*, Inoue at FIG. 1 and ¶ [0056].) While various communication paths are described, similar to Doviak, Inoue fails to teach or suggest the claimed opening two or more connections and selecting at least one of the opened connections as an active connection and the rest as passive connections. Further, Inoue fails to teach or suggest the claimed, “determine whether to open one or more additional connections; close one or more of the opened connections; and change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.” Inoue is simply silent as to these and other claimed features.

In addition, the Office concedes that Doviak at least fails to teach or suggest “the information comprising a command causes the server to contact a remote system, receive a reply from the remote system, and effect a response without transmitting the reply to the device.” (*See*, Office Action Dated September 26, 2007 at 42.) While the Office contends that Inoue teaches this feature in the abstract (*see, id.*), the cited portions of Inoue fails to support the contention.

As previously presented, Inoue teaches that “[t]he cache servers can be managed by receiving a message indicating at least a connection location of a mobile computer, selecting one or more cache servers located nearby the mobile computer according to the message, and controlling these one or more cache servers to cache selected WWW information selected for the mobile computer, so as to enable faster accesses to the selected WWW information by the mobile computer.” (*See*, Inoue at abstract.) In other words, the system in Inoue caches or stores the “WWW information” for faster access of the cached information by the mobile device. This feature in Inoue is not applicable to the claimed features in claim 11. In particular, the system in Inoue simply teaches that the “selected WWW information” is cached. Since the “WWW information” in Inoue is merely the data that mobile device can access, merely caching the data is not relevant to claim 11.

Further, the message in Inoue does not cause the cache servers to contact the mobile device. In contrast, the message merely receives the connection location of the mobile device and to cache the “WWW information.” Also, even if the cached information could somehow reasonably be construed as the claimed reply (which is not conceded), the information is made available to the mobile device in Inoue (i.e., “enable faster accesses to the selected WWW information by the mobile computer.”) In contrast, claim 11 recites that a reply is not transmitted to the device.

The Office has yet to address this claimed feature. Further, the Office has yet to respond to Applicant's remarks regarding this claimed feature. If the rejections are maintained in the next office action, Applicant respectfully requests that the Office fully address each and every claimed feature.

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For at least these reasons, claim 11 is allowable over the proposed combination of Doviak and Inoue.

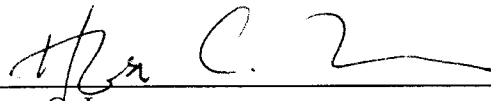
Claim 47

Claim 47 is allowable over the proposed combination of Doviak and Inoue for at least reasons similar to claim 11.

Please apply the appeal brief fee and any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: September 15, 2008



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Appendix of Claims

1. A method comprising:
at a device, opening a first connection to a server;
establishing an information exchange protocol for communicating on the first connection;
at a device, opening a second connection to the server;
selecting, from connections including the second connection, at least one connection to be an active connection and other connections as passive connections;
communicating information via the active connection using an information exchange protocol based on a type of the active connection; and
monitoring a predetermined set of parameters corresponding to one or more characteristics of the active and passive connections to determine whether to
open one or more additional connections;
close one or more of the opened connections; and
change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.
2. The method of claim 1 further comprising communicating information configured for the information exchange protocol using the first connection as the active connection prior to selecting the second connection as the active connection.
3. The method of claim 1 in which the second connection is opened prior to establishing the information exchange protocol.
4. The method of claim 1 in which a single one of the connections is selected as the active connection.
5. The method of claim 1 in which two or more connections are selected as the active connection.

6. The method of claim 1 in which the second connection includes a wireless connection.
7. A method comprising:
 - at a device, opening a first connection to a server;
 - establishing an information exchange protocol for communicating on the first connection based on a type of the first connection;
 - at the device, opening a second connection to the server;
 - selecting from the opened connections including the second connection, one or more connections to be an active connection;
 - communicating information configured for an information exchange protocol ;
 - corresponding to a type of the active connection; and
 - monitoring the opened connections for one or more parameters selected from a group consisting of transmittal rate, latency, and cost of transmittal; and
 - based on the monitored one or more parameters, determining whether to
 - open one or more additional connections;
 - reselect the active connection to optimize the monitored one or more parameters;and
 - close one or more additional connections.
8. The method of claim 1 in which the information is communicated in packets that include aggregated information for more than one application.
9. The method of claim 1, 4, or 6 in which the information includes a command that is effected by a module on the server.
10. The method of claim 8 in which the extent of aggregation for each application in the packets that include aggregated information for more than one application is dependent on an indicator of priority for information exchange associated with each application.

11. A method comprising:

- at a device, opening a first connection to a server;
- establishing an information exchange protocol for communicating on the first connection based on a type of the first connection;
- at the device, opening a second connection to the server;
- selecting, from the opened connections including the second connection, one or more connections to be an active connection;
- communicating information configured for the information exchange protocol, that was established for the first connection, using the active connection, the information comprising a command that causes the server to contact a remote system, receive a reply from the remote system, and effect a response without transmitting the reply to the device; and
- monitoring a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to
 - open one or more additional connections;
 - close one or more of the opened connections; and
 - change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.

19. An apparatus comprising a processor and software configured to cause the processor to:

- open a first connection to a server;
- establish an information exchange protocol;
- open a second connection to a server;
- select from connections including the second connection, one or more connections to be an active connection;
- communicate information via the active connection using the information exchange protocol established for the first connection; and
- monitor a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to
 - open one or more additional connections;

close one or more of the opened connections; and
change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.

20. The apparatus of claim 19 in which the processor is further configured to monitor the connections for a parameter selected from the group consisting of signal strength, transmittal rate, latency, cost of transmittal, and connection integrity; and
reselect the active connection to optimize the parameter.

21. The apparatus of claim 19 in which the information is communicated in packets, each of at least some of the packets includes aggregated information for different local applications.

22. The apparatus of claim 19 in which the information includes commands that are effected by a module on the server.

23. An article comprising a machine-readable medium that stores machine-executable instructions, the instructions causing a machine to:

- open a first connection to a server;
- establish an information exchange protocol;
- open a second connection to a server;
- select from the connections, one or more connections to be an active connection;
- communicate information via the active connection using the information exchange protocol established for the first connection; and
- monitor a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to
 - open one or more additional connections;
 - close one or more of the opened connections; and
 - change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.

24. The article of claim 23 in which a single one of the connections is selected as the active connection.

25. The article of claim 23 in which the instructions further cause the machine to monitor the connections for a parameter selected from the group consisting of signal strength, transmittal rate, latency, cost of transmittal, and connection integrity; and
reselect the active connection to optimize the parameter.

26. The article of claim 23 in which the information is communicated in packets, each of at least some of the packets includes aggregated information for different local applications.

27. The article of claim 23 in which the information includes commands that are effected by a module on the server.

28. A system comprising:
a device, a server, and communication links, in which the device is configured to:
open a first connection to the server using one of the communication links;
establish an information exchange protocol;
open a second connection to the server using another of the communication links;
select from the opened connections including the second connection, one or more connections to be an active connection;
communicate information via the active connection using the information exchange protocol established for the first connection; and
monitor a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to
open one or more additional connections;
close one or more of the opened connections; and
change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.

29. The system of claim 28 in which at least one of the communication links includes a wireless communication link.

30. The system of claim 28 in which the device is further configured to monitor the connections for a parameter selected from the group consisting of signal strength, transmittal rate, latency, cost of transmittal, and connection integrity; and
reselect the active connection to optimize the parameter.

31. The system of claim 28 in which the device is further configured to select, from the connections, a connection to be a passive connection.

32. The system of claim 31 in which the passive connection is maintained while at least some of the information is communicated using the active connection.

38. The method of claim 1 in which the device compares its geographic position to the range of one of the connections.

39. The method of claim 1 in which the device retains outgoing information until reception is acknowledged.

40. The method of claim 39 in which the device monitors a buffer that retains outgoing information to determine whether to transmit additional outgoing information.

41. The method of claim 1 in which the device implements software-based application sockets to connect application input/output streams to the server.

42. The method of claim 7 in which the parameter comprises transmittal rate.

43. The method of claim 7 in which the parameter comprises latency.

44. The method of claim 7 in which the parameter comprises cost of transmittal.

45. A method comprising:

at a device, opening a first connection to a server;

establishing an information exchange protocol for communicating on the first connection;

at a device, opening a second connection to the server;

selecting, from connections including the second connection, one or more connections to be an active connection and another connection to be a passive connection;

communicating information using the active connection, wherein the same network, security, and compression protocols and parameters are used for information exchange as for the first connection, while maintaining the passive connection; and

monitoring a predetermined set of parameters corresponding to one or more characteristics of the opened connections to determine whether to

open one or more additional connections;

close one or more of the opened connections; and

change the selected active connection as a passive connection and select one or more of the passive connections as the active connection.

46. The method of claim 45 in which the information is communicated in packets that include aggregated information for more than one application.

47. The method of claim 45 in which the information comprises a command for a module on the server; and the method comprises effecting the command by contacting a remote server, receiving a reply from the remote server and effecting a response without transmitting the reply to the device.

48. The method of claim 45 that comprises monitoring the connections for a parameter selected from the group consisting of signal strength, transmittal rate, latency, cost of transmittal, and connection integrity.

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Evidence Appendix

None.

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Related Proceedings Appendix

None.